Amendments to the Claims

This listing of claims set forth below replaces all prior versions and listings of claims in the application.

Listing of Claims

1-17 (canceled)

18. (previously presented) A method of analyzing a clock or communication signal comprised of transitions intended to occur at ideal points in time, but which in fact occur at non-ideal points in time, the method comprising:

receiving the signal;

timing a plurality of the transitions within the received signal;

constructing a histogram based upon the plurality of timed transitions; and

fitting a model distribution to a tail region of the histogram, the fitted model distribution providing information regarding deterministic and random jitter components within the signal.

19. (previously presented) The method of claim 18, wherein the fitting step comprises the steps of:

(a) finding a first and a second tail region of the histogram representing actual timing of the transitions;

(b) fitting the first and second tail regions to a predefined first model distribution and second model distribution, respectively; and

(c) estimating fitted parameters of the first model distribution and the second model distribution.

20. (previously presented) The method of claim 19, wherein the finding step comprises the step of finding the fist and second tail region based on a first derivative and second derivative method.

21. (previously presented) The method of claim 19, wherein the model parameters comprise mean (μ) and standard deviation (σ).

22. (previously presented) The method of claim 21, wherein the deterministic component is calculated according the following formula: $\mu 1 - \mu 2$, $\mu 1$ representing the mean of the first model distribution, and $\mu 2$ representing the mean of the second model distribution.

23. (previously presented) The method of claim 21, wherein the random component is calculated according the following formula $(\sigma 1 + \sigma 2)/2$, $\sigma 1$ representing the standard deviation of the first model distribution, and $\sigma 2$ representing the standard deviation of the second model distribution.

24. (withdrawn) In a system employing a clock or communication signal comprised of transitions intended to occur at ideal points in time, but which actually occur at non-ideal points in time, a method of analyzing a distribution that represents actual timing of the transitions, the method comprising:

fitting a model distribution to a tail region of the distribution representing actual timing of the transitions, the fitted model distribution providing information regarding deterministic and random jitter components within the signal.

25. (withdrawn) The method of claim 24, wherein the fitting step comprises the steps of:

(a) finding a first and a second tail region of the distribution representing actual timing of the transitions;

(b) fitting the first and second tail regions to a predefined first model distribution and second model distribution, respectively; and

(c) estimating fitted parameters of the first model distribution and the second model distribution.

26. (withdrawn) The method of claim 25, wherein the finding step comprises the step of finding the fist and second tail region based on a first derivative and second derivative method.

27. (withdrawn) The method of claim 25, wherein the model parameters comprise mean (μ) and standard deviation (σ).

28. (withdrawn) The method of claim 27, wherein the deterministic component is calculated according the following formula: $\mu 1 - \mu 2$, $\mu 1$ representing the mean of the first model distribution, and $\mu 2$ representing the mean of the second model distribution.

29. (withdrawn) The method of claim 27, wherein the random component is calculated according the following formula $(\sigma 1 + \sigma 2)/2$, $\sigma 1$ representing the standard deviation of the first model distribution, and $\sigma 2$ representing the standard deviation of the second model distribution.

30. (withdrawn) A method of identifying a random component of jitter from a distribution representing both random and deterministic jitter of a signal, the method comprising:

identifying a region of the distribution that is shaped by a random jitter component; and

fitting a Gaussian distribution to the region, thereby representing a random jitter component with the Gaussian distribution.

31. (withdrawn) The method of claim 30, wherein the fitting step comprises the steps of:

(a) finding a first and a second tail region of the distribution;

(b) fitting the first and second tail regions to a predefined first model distribution and second model distribution, respectively; and

(c) estimating fitted parameters of the first model distribution and the second model distribution.

32. (withdrawn) The method of claim 31, wherein the finding step comprises the step of finding the fist and second tail region based on a first derivative and second derivative method.

33. (withdrawn) The method of claim 31, wherein the model parameters comprise mean (μ) and standard deviation (σ).

34. (withdrawn) The method of claim 33, wherein the deterministic component is calculated according the following formula: $\mu 1 - \mu 2$, $\mu 1$ representing the mean of the first model distribution, and $\mu 2$ representing the mean of the second model distribution.

35. (withdrawn) The method of claim 33, wherein the random component is calculated according the following formula $(\sigma 1 + \sigma 2)/2$, $\sigma 1$ representing the standard deviation of the first model distribution, and $\sigma 2$ representing the standard deviation of the second model distribution.

36. (previously presented) An apparatus for analyzing a clock or communication signal comprised of transitions intended to occur at ideal points in time, but which in fact occur at non-ideal points in time, the apparatus comprising:

a measurement apparatus for timing a plurality of the transitions within the received signal; and

an analyzing unit for

constructing a histogram based upon the plurality of timed transitions; and

fitting a model distribution to a tail region of the histogram, the fitted model distribution providing information regarding deterministic and random jitter components within the signal.

37. (previously presented) The apparatus of claim 36, wherein the analyzing unit performs the following steps:

(a) finding a first and a second tail region of the histogram representing actual timing of the transitions;

(b) fitting the first and second tail regions to a predefined first model distribution and second model distribution, respectively; and

(c) estimating fitted parameters of the first model distribution and the second model distribution.

38. (previously presented) The apparatus of claim 37, wherein the finding step comprises the step of finding the fist and second tail region based on a first derivative and second derivative method.

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39. (previously presented) The apparatus of claim 37, wherein the model parameters comprise mean (μ) and standard deviation (σ).

40. (previously presented) The apparatus of claim 39, wherein the deterministic component is calculated according the following formula: $\mu 1 - \mu 2$, $\mu 1$ representing the mean of the first model distribution, and $\mu 2$ representing the mean of the second model distribution.

41. (previously presented) The apparatus of claim 39, wherein the random component is calculated according the following formula $(\sigma 1 + \sigma 2)/2$, $\sigma 1$ representing the standard deviation of the first model distribution, and $\sigma 2$ representing the standard deviation of the second model distribution.

42. (withdrawn) An apparatus for analyzing a distribution that represents actual timing of transitions collected from a system employing a clock or communication signal comprised of transitions intended to occur at ideal points in time, but which actually occur at non-ideal points in time, the apparatus comprising:

an analyzing unit for fitting a model distribution to a tail region of a distribution representing actual timing of the transitions, the fitted model distribution providing information regarding deterministic and random jitter components within the signal.

43. (withdrawn) The apparatus of claim 42, wherein the analyzing unit performs the following steps:

(a) finding a first and a second tail region of the distribution representing actual timing of the transitions;

(b) fitting the first and second tail regions to a predefined first model distribution and second model distribution, respectively; and

(c) estimating fitted parameters of the first model distribution and the second model distribution.

44. (withdrawn) The apparatus of claim 43, wherein the finding step comprises the step of finding the fist and second tail region based on a first derivative and second derivative method.

45. (withdrawn) The apparatus of claim 43, wherein the model parameters comprise mean (μ) and standard deviation (σ).

46. (withdrawn) The apparatus of claim 45, wherein the deterministic component is calculated according the following formula: $\mu 1 - \mu 2$, $\mu 1$ representing the mean of the first model distribution, and $\mu 2$ representing the mean of the second model distribution.

47. (withdrawn) The apparatus of claim 45, wherein the random component is calculated according the following formula $(\sigma 1 + \sigma 2)/2$, $\sigma 1$ representing the standard deviation of the first model distribution, and $\sigma 2$ representing the standard deviation of the second model distribution.

48. (withdrawn) An apparatus for identifying a random component of jitter from a distribution representing both random and deterministic jitter of a signal, the apparatus comprising:

an analyzing unit for

identifying a region of the distribution that is shaped by a random jitter component; and

fitting a Gaussian distribution to the region, thereby representing a random jitter component with the Gaussian distribution.

49. (withdrawn) The apparatus of claim 48, wherein the analyzing unit performs the following steps:

(a) finding a first and a second tail region of the distribution;

(b) fitting the first and second tail regions to a predefined first model distribution and second model distribution, respectively; and

(c) estimating fitted parameters of the first model distribution and the second model distribution.

50. (withdrawn) The apparatus of claim 49, wherein the finding step comprises the step of finding the fist and second tail region based on a first derivative and second derivative method.

51. (withdrawn) The apparatus of claim 49, wherein the model parameters comprise mean (μ) and standard deviation (σ).

52. (withdrawn) The apparatus of claim 51, wherein the deterministic component is calculated according the following formula: $\mu 1 - \mu 2$, $\mu 1$ representing the mean of the first model distribution, and $\mu 2$ representing the mean of the second model distribution.

53. (withdrawn) The apparatus of claim 51, wherein the random component is calculated according the following formula $(\sigma 1 + \sigma 2)/2$, $\sigma 1$ representing the standard deviation of the first model distribution, and $\sigma 2$ representing the standard deviation of the second model distribution.

54. (previously presented) A method of analyzing a clock or communication signal comprised of signals components intended to have an ideal amplitude, but which in fact have a non-ideal amplitude, the method comprising:

receiving the signal;

measuring the actual amplitude of the signal components of the received signal;

constructing a histogram based upon the plurality of measured amplitudes; and

fitting a model distribution to a tail region of the histogram, the fitted model distribution providing information regarding deterministic and random noise components of the signal.

55. (previously presented) The method of claim 54, wherein the fitting step comprises the steps of:

(a) finding a first and a second tail region of the histogram representing actual amplitudes of the signal components;

(b) fitting the first and second tail regions to a predefined first model distribution and second model distribution, respectively; and

(c) estimating fitted parameters of the first model distribution and the second model distribution.

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56. (previously presented) The method of claim 55, wherein the finding step comprises the step of finding the fist and second tail region based on a first derivative and second derivative method.

57. (previously presented) The method of claim 55, wherein the model parameters comprise mean (μ) and standard deviation (σ).

58. (previously presented) The method of claim 57, wherein the deterministic component is calculated according the following formula: $\mu1 - \mu2$, $\mu1$ representing the mean of the first model distribution, and $\mu2$ representing the mean of the second model distribution.

59. (previously presented) The method of claim 57, wherein the random component is calculated according the following formula $(\sigma1 + \sigma2)/2$, $\sigma1$ representing the standard deviation of the first model distribution, and $\sigma2$ representing the standard deviation of the second model distribution.

60. (withdrawn) In a system employing a clock or communication signal comprised of signals components intended to have an ideal amplitude, but which in fact have a non-ideal amplitude, a method of analyzing a distribution that represents actual amplitudes of the components, the method comprising:

fitting a model distribution to a tail region of the distribution representing actual amplitudes of the components, the fitted model distribution providing information regarding deterministic and random noise components within the signal.

61. (withdrawn) The method of claim 60, wherein the fitting step comprises the steps of:

(a) finding a first and a second tail region of the distribution representing actual amplitudes of the signal components;

(b) fitting the first and second tail regions to a predefined first model distribution and second model distribution, respectively; and

(c) estimating fitted parameters of the first model distribution and the second model distribution.

62. (withdrawn) The method of claim 61, wherein the finding step comprises the step of finding the fist and second tail region based on a first derivative and second derivative method.

63. (withdrawn) The method of claim 61, wherein the model parameters comprise mean (μ) and standard deviation (σ).

64. (withdrawn) The method of claim 63, wherein the deterministic component is calculated according the following formula: $\mu1 - \mu2$, $\mu1$ representing the mean of the first model distribution, and $\mu2$ representing the mean of the second model distribution.

65. (withdrawn) The method of claim 63, wherein the random component is calculated according the following formula $(\sigma 1 + \sigma 2)/2$, $\sigma 1$ representing the standard deviation of the first model distribution, and $\sigma 2$ representing the standard deviation of the second model distribution.

66. (withdrawn) A method of identifying a random component of jitter from a distribution representing both random and deterministic amplitude jitter of a signal, the method comprising:

identifying a region of the distribution that is shaped by a random amplitude jitter component; and

fitting a Gaussian distribution to the region, thereby representing a random amplitude jitter component with the Gaussian distribution.

67. (withdrawn) The method of claim 66, wherein the fitting step comprises the steps of:

(a) finding a first and a second tail region of the distribution;

(b) fitting the first and second tail regions to a predefined first model distribution and second model distribution, respectively; and

(c) estimating fitted parameters of the first model distribution and the second model distribution.

68. (withdrawn) The method of claim 67, wherein the finding step comprises the step of finding the fist and second tail region based on a first derivative and second derivative method.

69. (withdrawn) The method of claim 67, wherein the model parameters comprise mean (μ) and standard deviation (σ).

70. (withdrawn) The method of claim 69, wherein the deterministic component is calculated according the following formula: $\mu 1 - \mu 2$, $\mu 1$ representing the mean of the first model distribution, and $\mu 2$ representing the mean of the second model distribution.

71. (withdrawn) The method of claim 69, wherein the random component is calculated according the following formula $(\sigma 1 + \sigma 2)/2$, $\sigma 1$ representing the standard deviation of the first model distribution, and $\sigma 2$ representing the standard deviation of the second model distribution.

72. (previously presented) An apparatus for analyzing a clock or communication signal comprised of signals components intended to have an ideal amplitude, but which in fact have a non-ideal amplitude, the apparatus comprising:

a measurement apparatus for measuring the actual amplitude of the signal components of the received signal; and

an analyzing unit for

constructing a histogram based upon the plurality of measured amplitudes; and

fitting a model distribution to a tail region of the histogram, the fitted model distribution providing information regarding deterministic and random noise components of the signal.

73. (previously presented) The apparatus of claim 72, wherein the analyzing unit performs the following steps:

(a) finding a first and a second tail region of the histogram;

(b) fitting the first and second tail regions to a predefined first model distribution and second model distribution, respectively; and

(c) estimating fitted parameters of the first model distribution and the second model distribution.

74. (previously presented) The apparatus of claim 73, wherein the finding step comprises the step of finding the fist and second tail region based on a first derivative and second derivative method.

75. (previously presented) The apparatus of claim 73, wherein the model parameters comprise mean (μ) and standard deviation (σ).

76. (previously presented) The apparatus of claim 75, wherein the deterministic component is calculated according the following formula: $\mu 1 - \mu 2$, $\mu 1$ representing the mean of the first model distribution, and $\mu 2$ representing the mean of the second model distribution.

77. (previously presented) The apparatus of claim 75, wherein the random component is calculated according the following formula $(\sigma 1 + \sigma 2)/2$, $\sigma 1$ representing the standard deviation of the first model distribution, and $\sigma 2$ representing the standard deviation of the second model distribution.

78. (withdrawn) An apparatus for analyzing a distribution that represents actual amplitudes of signal components collected from a system employing a clock or communication signal comprised of signals components intended to have an ideal amplitude, but which in fact have a non-ideal amplitude, the apparatus comprising:

an analyzing unit for fitting a model distribution to a tail region of the distribution representing actual amplitudes of the components, the fitted model distribution providing information regarding deterministic and random noise components within the signal.

79. (withdrawn) The apparatus of claim 78, wherein the analyzing unit performs the following steps:

(a) finding a first and a second tail region of the histogram;

(b) fitting the first and second tail regions to a predefined first model distribution and second model distribution, respectively; and

(c) estimating fitted parameters of the first model distribution and the second model distribution.

80. (withdrawn) The apparatus of claim 79, wherein the finding step comprises the step of finding the fist and second tail region based on a first derivative and second derivative method.

81. (withdrawn) The apparatus of claim 79, wherein the model parameters comprise mean (μ) and standard deviation (σ).

82. (withdrawn) The apparatus of claim 81, wherein the deterministic component is calculated according the following formula: $\mu 1 - \mu 2$, $\mu 1$ representing the mean of the first model distribution, and $\mu 2$ representing the mean of the second model distribution.

83. (withdrawn) The apparatus of claim 81, wherein the random component is calculated according the following formula $(\sigma 1 + \sigma 2)/2$, $\sigma 1$ representing the standard deviation of the first model distribution, and $\sigma 2$ representing the standard deviation of the second model distribution.

84. (withdrawn) An apparatus for identifying a random component of amplitude jitter from a distribution representing both random and deterministic amplitude jitter of a signal, the apparatus comprising:

an analyzing unit for

identifying a region of the distribution that is shaped by a random amplitude jitter component; and

fitting a Gaussian distribution to the region, thereby representing a random amplitude jitter component with the Gaussian distribution.

85. (withdrawn) The apparatus of claim 84, wherein the analyzing unit performs the following steps:

(a) finding a first and a second tail region of the distribution;

(b) fitting the first and second tail regions to a predefined first model distribution and second model distribution, respectively; and

(c) estimating fitted parameters of the first model distribution and the second model distribution.

86. (withdrawn) The apparatus of claim 85, wherein the finding step comprises the step of finding the fist and second tail region based on a first derivative and second derivative method.

87. (withdrawn) The apparatus of claim 85, wherein the model parameters comprise mean (μ) and standard deviation (σ).

88. (withdrawn) The apparatus of claim 87, wherein the deterministic component is calculated according the following formula: $\mu 1 - \mu 2$, $\mu 1$ representing the mean of the first model distribution, and $\mu 2$ representing the mean of the second model distribution.

89. (withdrawn) The apparatus of claim 87, wherein the random component is calculated according the following formula $(\sigma 1 + \sigma 2)/2$, $\sigma 1$ representing the standard deviation of the first model distribution, and $\sigma 2$ representing the standard deviation of the second model distribution.

90. (previously presented) A method of analyzing a clock or communication signal comprised of waveforms intended to have an ideal phase, but which in fact have a non-ideal phase, the method comprising:

receiving the signal;

measuring the actual phase of the waveforms of the received signal;

constructing a histogram based upon the measured phases; and

fitting a model distribution to a tail region of the histogram, the fitted model distribution providing information regarding deterministic and random phase jitter components of the signal.

91. (previously presented) The method of claim 90, wherein the fitting step comprises the steps of:

(a) finding a first and a second tail region of the histogram representing actual phases of the waveforms;

(b) fitting the first and second tail regions to a predefined first model distribution and second model distribution, respectively; and

(c) estimating fitted parameters of the first model distribution and the second model distribution.

92. (previously presented) The method of claim 91, wherein the finding step comprises the step of finding the fist and second tail region based on a first derivative and second derivative method.

93. (previously presented) The method of claim 91, wherein the model parameters comprise mean (μ) and standard deviation (σ).

94. (previously presented) The method of claim 93, wherein the deterministic component is calculated according the following formula: $\mu 1 - \mu 2$, $\mu 1$ representing the mean of the first model distribution, and $\mu 2$ representing the mean of the second model distribution.

95. (previously presented) The method of claim 93, wherein the random component is calculated according the following formula $(\sigma 1 + \sigma 2)/2$, $\sigma 1$ representing the standard deviation of the first model distribution, and $\sigma 2$ representing the standard deviation of the second model distribution.

96. (withdrawn) In a system employing a clock or communication signal comprised of waveforms intended to have an ideal phase, but which in fact have a non-ideal phase, a method of analyzing a distribution that represents actual phases of the waveforms, the method comprising:

fitting a model distribution to a tail region of the distribution representing actual phases of the waveforms, the fitted model distribution providing information regarding deterministic and random phase jitter components within the signal.

97. (withdrawn) The method of claim 96, wherein the fitting step comprises the steps of:

(a) finding a first and a second tail region of the distribution representing actual phases of the waveforms;

(b) fitting the first and second tail regions to a predefined first model distribution and second model distribution, respectively; and

(c) estimating fitted parameters of the first model distribution and the second model distribution.

98. (withdrawn) The method of claim 97, wherein the finding step comprises the step of finding the fist and second tail region based on a first derivative and second derivative method.

99. (withdrawn) The method of claim 97, wherein the model parameters comprise mean (μ) and standard deviation (σ).

100. (withdrawn) The method of claim 99, wherein the deterministic component is calculated according the following formula: $\mu 1 - \mu 2$, $\mu 1$ representing the mean of the first model distribution, and $\mu 2$ representing the mean of the second model distribution.

101. (withdrawn) The method of claim 99, wherein the random component is calculated according the following formula $(\sigma 1 + \sigma 2)/2$, $\sigma 1$ representing the standard deviation of the first model distribution, and $\sigma 2$ representing the standard deviation of the second model distribution.

102. (previously presented) An apparatus for analyzing a clock or communication signal comprised of waveforms intended to have an ideal phase, but which in fact have a non-ideal phase, the apparatus comprising:

a measurement apparatus for measuring the actual phase of the waveforms of the received signal; and

an analyzing unit for

constructing a histogram based upon the measured phases; and

fitting a model distribution to a tail region of the histogram, the fitted model distribution providing information regarding deterministic and random phase jitter components of the signal.

103. (previously presented) The apparatus of claim 102, wherein the analyzing unit performs the following steps:

(a) finding a first and a second tail region of the histogram;

(b) fitting the first and second tail regions to a predefined first model distribution and second model distribution, respectively; and

(c) estimating fitted parameters of the first model distribution and the second model distribution.

104. (previously presented) The apparatus of claim 103, wherein the finding step comprises the step of finding the fist and second tail region based on a first derivative and second derivative method.

105. (previously presented) The apparatus of claim 103, wherein the model parameters comprise mean (μ) and standard deviation (σ).

106. (previously presented) The apparatus of claim 105, wherein the deterministic component is calculated according the following formula: $\mu 1 - \mu 2$, $\mu 1$ representing the mean of the first model distribution, and $\mu 2$ representing the mean of the second model distribution.

107. (previously presented) The apparatus of claim 105, wherein the random component is calculated according the following formula $(\sigma 1 + \sigma 2)/2$, $\sigma 1$ representing the standard deviation of the first model distribution, and $\sigma 2$ representing the standard deviation of the second model distribution.

108. (withdrawn) An apparatus for analyzing a distribution that represents actual phases of waveforms collected from a system employing a clock or communication signal comprised of waveforms intended to have an ideal phase, but which in fact have a non-ideal phase, the apparatus comprising:

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an analyzing unit for fitting a model distribution to a tail region of the distribution representing actual phases of the waveforms, the fitted model distribution providing information regarding deterministic and random phase jitter components within the signal.

109. (withdrawn) The apparatus of claim 108, wherein the analyzing unit performs the following steps:

(a) finding a first and a second tail region of the distribution;

(b) fitting the first and second tail regions to a predefined first model distribution and second model distribution, respectively; and

(c) estimating fitted parameters of the first model distribution and the second model distribution.

110. (withdrawn) The apparatus of claim 109, wherein the finding step comprises the step of finding the fist and second tail region based on a first derivative and second derivative method.

111. (withdrawn) The apparatus of claim 109, wherein the model parameters comprise mean (μ) and standard deviation (σ).

112. (withdrawn) The apparatus of claim 111, wherein the deterministic component is calculated according the following formula: $\mu 1 - \mu 2$, $\mu 1$ representing the mean of the first model distribution, and $\mu 2$ representing the mean of the second model distribution.

113. (withdrawn) The apparatus of claim 111 wherein the random component is calculated according the following formula $(\sigma 1 + \sigma 2)/2$, $\sigma 1$ representing the standard deviation of the first model distribution, and $\sigma 2$ representing the standard deviation of the second model distribution.

114. (previously presented) A method of analyzing a clock signal intended to have a particular period, but which in fact has an irregular period, the method comprising:

receiving the signal;

timing a plurality of periods within the received signal;

constructing a histogram based upon the plurality of timed periods; and

fitting a model distribution to a tail region of the histogram, the fitted model distribution providing information regarding deterministic and random jitter components within the signal.

115. (previously presented) The method of claim 114, wherein the fitting step comprises the steps of:

(a) finding a first and a second tail region of the histogram representing actual periods within the clock signal;

(b) fitting the first and second tail regions to a predefined first model distribution and second model distribution, respectively; and

(c) estimating fitted parameters of the first model distribution and the second model distribution.

116. (previously presented) The method of claim 115, wherein the finding step comprises the step of finding the fist and second tail region based on a first derivative and second derivative method.

117. (previously presented) The method of claim 115, wherein the model parameters comprise mean (μ) and standard deviation (σ).

118. (previously presented) The method of claim 117, wherein the deterministic component is calculated according the following formula: $\mu 1 - \mu 2$, $\mu 1$ representing the mean of the first model distribution, and $\mu 2$ representing the mean of the second model distribution.

119. (previously presented) The method of claim 117, wherein the random component is calculated according the following formula $(\sigma 1 + \sigma 2)/2$, $\sigma 1$ representing the standard deviation of the first model distribution, and $\sigma 2$ representing the standard deviation of the second model distribution.

120. (withdrawn) In a system employing a clock signal intended to have a particular period, but which actually has an irregular period, a method of analyzing a distribution that represents actual periods within the signal, the method comprising:

fitting a model distribution to a tail region of the distribution representing actual periods within the signal, the fitted model distribution providing information regarding deterministic and random jitter components within the signal.

121. (withdrawn) The method of claim 120, wherein the fitting step comprises the steps of:

(a) finding a first and a second tail region of the distribution representing actual periods within the signal;

(b) fitting the first and second tail regions to a predefined first model distribution and second model distribution, respectively; and

(c) estimating fitted parameters of the first model distribution and the second model distribution.

122. (withdrawn) The method of claim 121, wherein the finding step comprises the step of finding the fist and second tail region based on a first derivative and second derivative method.

123. (withdrawn) The method of claim 121, wherein the model parameters comprise mean (μ) and standard deviation (σ).

124. (withdrawn) The method of claim 123, wherein the deterministic component is calculated according the following formula: $\mu 1 - \mu 2$, $\mu 1$ representing the mean of the first model distribution, and $\mu 2$ representing the mean of the second model distribution.

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125. (withdrawn) The method of claim 123, wherein the random component is calculated according the following formula $(\sigma 1 + \sigma 2)/2$, $\sigma 1$ representing the standard deviation of the first model distribution, and $\sigma 2$ representing the standard deviation of the second model distribution.

126. (previously presented) An apparatus for analyzing a clock signal intended to have a particular period, but which in fact has an irregular period, the apparatus comprising:

a measurement apparatus for timing a plurality of periods within the received signal; and

an analyzing unit for

constructing a histogram based upon the plurality of timed periods; and

fitting a model distribution to a tail region of the histogram, the fitted model distribution providing information regarding deterministic and random jitter components within the signal.

127. (previously presented) The apparatus of claim 126, wherein the analyzing unit performs the following steps:

(a) finding a first and a second tail region of the histogram;

(b) fitting the first and second tail regions to a predefined first model distribution and second model distribution, respectively; and

(c) estimating fitted parameters of the first model distribution and the second model distribution.

128. (previously presented) The apparatus of claim 127, wherein the finding step comprises the step of finding the fist and second tail region based on a first derivative and second derivative method.

129. (previously presented) The apparatus of claim 127, wherein the model parameters comprise mean (μ) and standard deviation (σ).

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130. (previously presented) The apparatus of claim 129, wherein the deterministic component is calculated according the following formula: $\mu 1 - \mu 2$, $\mu 1$ representing the mean of the first model distribution, and $\mu 2$ representing the mean of the second model distribution.

131. (previously presented) The apparatus of claim 129, wherein the random component is calculated according the following formula $(\sigma 1 + \sigma 2)/2$, $\sigma 1$ representing the standard deviation of the first model distribution, and $\sigma 2$ representing the standard deviation of the second model distribution.

132. (withdrawn) An apparatus for analyzing a distribution that represents actual periods within a clock signal collected from a system employing a clock signal intended to have a particular period, but which actually has an irregular period, the apparatus comprising:

an analyzing unit for fitting a model distribution to a tail region of the distribution representing actual periods within the signal, the fitted model distribution providing information regarding deterministic and random jitter components within the signal.

133. (withdrawn) The apparatus of claim 132, wherein the analyzing unit performs the following steps:

(a) finding a first and a second tail region of the distribution;

(b) fitting the first and second tail regions to a predefined first model distribution and second model distribution, respectively; and

(c) estimating fitted parameters of the first model distribution and the second model distribution.

134. (withdrawn) The apparatus of claim 133, wherein the finding step comprises the step of finding the fist and second tail region based on a first derivative and second derivative method.

135. (withdrawn) The apparatus of claim 133, wherein the model parameters comprise mean (μ) and standard deviation (σ).

136. (withdrawn) The apparatus of claim 135, wherein the deterministic component is calculated according the following formula: $\mu 1 - \mu 2$, $\mu 1$ representing the mean of the first model distribution, and $\mu 2$ representing the mean of the second model distribution.

137. (withdrawn) The apparatus of claim 135, wherein the random component is calculated according the following formula $(\sigma 1 + \sigma 2)/2$, $\sigma 1$ representing the standard deviation of the first model distribution, and $\sigma 2$ representing the standard deviation of the second model distribution.

138. (previously presented) A method of analyzing a clock signal intended to have a particular frequency, but which in fact has an irregular frequency, the method comprising:

receiving the signal;

taking a plurality of frequency measurements of the received signal;

constructing a histogram based upon the plurality of frequency measurements; and

fitting a model distribution to a tail region of the histogram, the fitted model distribution providing information regarding deterministic and random jitter components within the signal.

139. (previously presented) The method of claim 138, wherein the fitting step comprises the steps of:

(a) finding a first and a second tail region of the histogram representing actual frequencies within the clock signal;

(b) fitting the first and second tail regions to a predefined first model distribution and second model distribution, respectively; and

(c) estimating fitted parameters of the first model distribution and the second model distribution.

140. (previously presented) The method of claim 139, wherein the finding step comprises the step of finding the fist and second tail region based on a first derivative and second derivative method.

141. (previously presented) The method of claim 139, wherein the model parameters comprise mean (μ) and standard deviation (σ).

142. (previously presented) The method of claim 141, wherein the deterministic component is calculated according the following formula: $\mu 1 - \mu 2$, $\mu 1$ representing the mean of the first model distribution, and $\mu 2$ representing the mean of the second model distribution.

143. (previously presented) The method of claim 141, wherein the random component is calculated according the following formula $(\sigma 1 + \sigma 2)/2$, $\sigma 1$ representing the standard deviation of the first model distribution, and $\sigma 2$ representing the standard deviation of the second model distribution.

144. (withdrawn) In a system employing a clock signal intended to have a particular frequency, but which actually has an irregular frequency, a method of analyzing a distribution that represents actual frequencies within the signal, the method comprising:

fitting a model distribution to a tail region of the distribution representing actual frequencies within the signal, the fitted model distribution providing information regarding deterministic and random jitter components within the signal.

145. (withdrawn) The method of claim 144, wherein the fitting step comprises the steps of:

(a) finding a first and a second tail region of the distribution representing actual frequencies within the signal;

(b) fitting the first and second tail regions to a predefined first model distribution and second model distribution, respectively; and

(c) estimating fitted parameters of the first model distribution and the second model distribution.

146. (withdrawn) The method of claim 145, wherein the finding step comprises the step of finding the fist and second tail region based on a first derivative and second derivative method.

147. (withdrawn) The method of claim 145, wherein the model parameters comprise mean (μ) and standard deviation (σ).

148. (withdrawn) The method of claim 147, wherein the deterministic component is calculated according the following formula: $\mu 1 - \mu 2$, $\mu 1$ representing the mean of the first model distribution, and $\mu 2$ representing the mean of the second model distribution.

149. (withdrawn) The method of claim 147, wherein the random component is calculated according the following formula $(\sigma 1 + \sigma 2)/2$, $\sigma 1$ representing the standard deviation of the first model distribution, and $\sigma 2$ representing the standard deviation of the second model distribution.

150. (previously presented) An apparatus for analyzing a clock signal intended to have a particular frequency, but which in fact has an irregular frequency, the apparatus comprising:

a measurement apparatus for taking a plurality of frequency measurements of the received signal; and

an analyzing unit for

constructing a histogram based upon the plurality of frequency measurements; and

fitting a model distribution to a tail region of the histogram, the fitted model distribution providing information regarding deterministic and random jitter components within the signal.

151. (previously presented) The apparatus of claim 150, wherein the analyzing unit performs the following steps:

(a) finding a first and a second tail region of the histogram;

(b) fitting the first and second tail regions to a predefined first model distribution and second model distribution, respectively; and

(c) estimating fitted parameters of the first model distribution and the second model distribution.

152. (previously presented) The apparatus of claim 151, wherein the finding step comprises the step of finding the fist and second tail region based on a first derivative and second derivative method.

153. (previously presented) The apparatus of claim 151, wherein the model parameters comprise mean (μ) and standard deviation (σ).

154. (previously presented) The apparatus of claim 153, wherein the deterministic component is calculated according the following formula: $\mu1 - \mu2$, $\mu1$ representing the mean of the first model distribution, and $\mu2$ representing the mean of the second model distribution.

155. (previously presented) The apparatus of claim 153, wherein the random component is calculated according the following formula $(\sigma 1 + \sigma 2)/2$, $\sigma 1$ representing the standard deviation of the first model distribution, and $\sigma 2$ representing the standard deviation of the second model distribution.

156. (withdrawn) An apparatus for analyzing a distribution that represents actual frequencies within a clock signal collected from a system employing a clock signal intended to have a particular frequency, but which actually has an irregular frequency, the apparatus comprising:

an analyzing unit for fitting a model distribution to a tail region of the distribution representing actual frequencies within the signal, the fitted model distribution providing information regarding deterministic and random jitter components within the signal.

157. (withdrawn) The apparatus of claim 156, wherein the analyzing unit performs the following steps:

(a) finding a first and a second tail region of the distribution;

(b) fitting the first and second tail regions to a predefined first model distribution and second model distribution, respectively; and

(c) estimating fitted parameters of the first model distribution and the second model distribution.

158. (withdrawn) The apparatus of claim 157, wherein the finding step comprises the step of finding the fist and second tail region based on a first derivative and second derivative method.

159. (withdrawn) The apparatus of claim 157, wherein the model parameters comprise mean (μ) and standard deviation (σ).

160. (withdrawn) The apparatus of claim 159, wherein the deterministic component is calculated according the following formula: $\mu 1 - \mu 2$, $\mu 1$ representing the mean of the first model distribution, and $\mu 2$ representing the mean of the second model distribution.

161. (withdrawn) The apparatus of claim 159, wherein the random component is calculated according the following formula $(\sigma 1 + \sigma 2)/2$, $\sigma 1$ representing the standard deviation of the first model distribution, and $\sigma 2$ representing the standard deviation of the second model distribution.

162. (previously presented) A method of analyzing a clock or communication signal comprised of waveforms intended to have a particular rise or fall time, but which in fact have a non-ideal rise or fall time, the method comprising:

receiving the signal;

timing a plurality of rise or fall times within the received signal;

constructing a histogram based upon the plurality of timed rise or fall times; and

fitting a model distribution to a tail region of the histogram, the fitted model distribution providing information regarding deterministic and random jitter components within the signal.

163. (previously presented) The method of claim 162, wherein the fitting step comprises the steps of:

(a) finding a first and a second tail region of the histogram representing actual rise or fall times of the waveforms;

(b) fitting the first and second tail regions to a predefined first model distribution and second model distribution, respectively; and

(c) estimating fitted parameters of the first model distribution and the second model distribution.

164. (previously presented) The method of claim 163, wherein the finding step comprises the step of finding the fist and second tail region based on a first derivative and second derivative method.

165. (previously presented) The method of claim 163, wherein the model parameters comprise mean (μ) and standard deviation (σ).

166. (previously presented) The method of claim 165, wherein the deterministic component is calculated according the following formula: $\mu1 - \mu2$, $\mu1$ representing the mean of the first model distribution, and $\mu2$ representing the mean of the second model distribution.

167. (previously presented) The method of claim 165, wherein the random component is calculated according the following formula $(\sigma1 + \sigma2)/2$, $\sigma1$ representing the standard deviation of the first model distribution, and $\sigma2$ representing the standard deviation of the second model distribution.

168. (withdrawn) In a system employing a clock or communication signal comprised of waveforms intended to have a particular rise or fall time, but which in fact have a non-ideal rise or fall time, a method of analyzing a distribution that represents actual rise or fall times of the signal, the method comprising:

fitting a model distribution to a tail region of the distribution representing actual rise or fall times of the signal, the fitted model distribution providing information regarding deterministic and random jitter components within the signal.

169. (withdrawn) The method of claim 168, wherein the fitting step comprises the steps of:

(a) finding a first and a second tail region of the distribution representing actual rise or fall times of the waveforms;

(b) fitting the first and second tail regions to a predefined first model distribution and second model distribution, respectively; and

(c) estimating fitted parameters of the first model distribution and the second model distribution.

170. (withdrawn) The method of claim 169, wherein the finding step comprises the step of finding the fist and second tail region based on a first derivative and second derivative method.

171. (withdrawn) The method of claim 169, wherein the model parameters comprise mean (μ) and standard deviation (σ).

172. (withdrawn) The method of claim 171, wherein the deterministic component is calculated according the following formula: $\mu 1 - \mu 2$, $\mu 1$ representing the mean of the first model distribution, and $\mu 2$ representing the mean of the second model distribution.

173. (withdrawn) The method of claim 171, wherein the random component is calculated according the following formula $(\sigma 1 + \sigma 2)/2$, $\sigma 1$ representing the standard deviation of the first model distribution, and $\sigma 2$ representing the standard deviation of the second model distribution.

174. (previously presented) An apparatus for analyzing a clock or communication signal comprised of waveforms intended to have a particular rise or fall time, but which in fact have a non-ideal rise or fall time, the apparatus comprising:

a measurement apparatus for timing a plurality of rise or fall times within the received signal; and

an analyzing unit for

constructing a histogram based upon the plurality of timed rise or fall times; and

fitting a model distribution to a tail region of the histogram, the fitted model distribution providing information regarding deterministic and random jitter components within the signal.

175. (previously presented) The apparatus of claim 174, wherein the analyzing unit performs the following steps:

(a) finding a first and a second tail region of the histogram;

(b) fitting the first and second tail regions to a predefined first model distribution and second model distribution, respectively; and

(c) estimating fitted parameters of the first model distribution and the second model distribution.

176. (previously presented) The apparatus of claim 175, wherein the finding step comprises the step of finding the fist and second tail region based on a first derivative and second derivative method.

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177. (previously presented) The apparatus of claim 175, wherein the model parameters comprise mean (μ) and standard deviation (σ).

178. (previously presented) The apparatus of claim 177, wherein the deterministic component is calculated according the following formula: $\mu 1 - \mu 2$, $\mu 1$ representing the mean of the first model distribution, and $\mu 2$ representing the mean of the second model distribution.

179. (previously presented) The apparatus of claim 177, wherein the random component is calculated according the following formula $(\sigma 1 + \sigma 2)/2$, $\sigma 1$ representing the standard deviation of the first model distribution, and $\sigma 2$ representing the standard deviation of the second model distribution.

180. (withdrawn) An apparatus for analyzing a distribution that represents actual rise or fall times of waveforms collected from a system employing a clock or communication signal comprised of waveforms intended to have a particular rise or fall time, but which in fact have a non-ideal rise or fall time, the method comprising:

an analyzing unit for fitting a model distribution to a tail region of the distribution representing actual rise or fall times of the signal, the fitted model distribution providing information regarding deterministic and random jitter components within the signal.

181. (withdrawn) The apparatus of claim 180, wherein the analyzing unit performs the following steps:

(a) finding a first and a second tail region of the distribution;

(b) fitting the first and second tail regions to a predefined first model distribution and second model distribution, respectively; and

(c) estimating fitted parameters of the first model distribution and the second model distribution.

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182. (withdrawn) The apparatus of claim 181, wherein the finding step comprises the step of finding the fist and second tail region based on a first derivative and second derivative method.

183. (withdrawn) The apparatus of claim 181, wherein the model parameters comprise mean (μ) and standard deviation (σ).

184. (withdrawn) The apparatus of claim 183, wherein the deterministic component is calculated according the following formula: $\mu 1 - \mu 2$, $\mu 1$ representing the mean of the first model distribution, and $\mu 2$ representing the mean of the second model distribution.

185. (withdrawn) The apparatus of claim 183, wherein the random component is calculated according the following formula $(\sigma 1 + \sigma 2)/2$, $\sigma 1$ representing the standard deviation of the first model distribution, and $\sigma 2$ representing the standard deviation of the second model distribution.

186. (new) A method for analyzing a clock or communication signal comprised of at least one signal feature intended to exhibit an ideal characteristic, but which in fact exhibits a non-ideal characteristic, the method comprising:

receving the signal;

measuring a plurality of signal features within the received signal;

constructing a histogram based upon the plurality of measured features;

fitting a model distribution to a tail region of the histogram, the fitted model distribution providing information regarding deterministic and random jitter components within the signal.

187. (new) An apparatus for analyzing a clock or communication signal comprised of at least one signal feature intended to exhibit an ideal characteristic, but which in fact exhibits a non-ideal characteristic, the apparatus comprising:

a measurement apparatus for timing a plurality of rise or fall times within the received signal; and

an analyzing unit for executing the method of claim 186.